

Academy

California Academy of Sciences' Member Newsletter

April & May 2002

skulls

opens March 30

Earth Day Festival

April 20 & 21

Academy Ball

May 17



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To explore and explain the natural world

STEINHART AQUARIUM • MORRISON PLANETARIUM • NATURAL HISTORY MUSEUM

MESSAGE TO MEMBERS

Science Fair—a display of the innovative accomplishments of young Bay Area scientists—has returned, after a few years absence, to where it belongs, the California Academy of Sciences. Despite recent dire reports of the condition of science education in the state, there is wonderful, creative work being done and the scientific process is alive and well in Northern California. What we need to do now—and the Academy plans to take a more active role in this—is to raise the level for all children.

As you receive this newsletter, the Academy will be just beginning a tumultuous series of exciting events.



PHOTO: DONG LIN

After six months of reconstruction following our devastating fire, Hohfeld Hall, or Earth and Science Hall, is finally reopening. It looks quite different from the way you remember it, especially because we are celebrating the opening with a new exhibit—Powers of 10. A series of 44 photographs dramatically portray relative size, from clusters

of galaxies a billion light years across to the smallest sub-atomic particle. The exhibit is based on a film conceived by Charles and Ray Eames, and was designed by their grandson, Eames Demetrios, who was an intern at the Academy as a child. Using specific examples and unusual specimens, the exhibition has been customized to reflect the significance of scale, of both size and time, to the work of Academy scientists.

Almost simultaneously, another ambitious exhibit opens in Wattis Hall—Skulls. This extraordinary display of vertebrates' craniums and mandibles, taken from the collections of the departments of Ornithology and Mammalogy, Ichthyology, and Herpetology and supplemented by specimens collected by longtime "headhunter" and Academy Associate, Raymond Bandar, will be a highlight of the museum for the rest of this year. It will demonstrate a wide range of themes—adaptation, diversity, pathology, and, above all, evolution.

After last year's highly successful event, we will again show our commitment to a healthy environment and celebrate Earth Day with a festival on April 20 and 21. It should be a gloriously rewarding, and fun weekend. Check for details inside. The following month, we welcome Asian-Pacific American Heritage Month with a series of dancers, acrobats, and storytellers. Don't expect the Academy to be slowing down anytime soon.

Patrick Kociolek
Executive Director

RoundAbout

News from Around the Academy

Quadruplet Sharks Born in Steinhart Aquarium

Marsha, a six-foot long, white-tipped shark who lives in Steinhart Aquarium, gave birth to four 25-inch, three-pound baby sharks on February 22. One of the pups has been identified as a female, the sex of the other three was not known at the time of going to press.

"It's a rare event for a first-time mother of this species to give birth to four, healthy shark pups in captivity," said the shark's keeper, Pam Schaller, aquatic biologist at the Steinhart Aquarium. "We hadn't been expecting more than two pups. But, the newborns are feeding well and we are optimistic about their chances for survival."

Baby sharks often don't make it past their first five days of life; but Marsha's children appeared to be healthy and feeding well. The young sharks have been eating approximately 5% of their body weight each day and have been resting as a group in a dark corner of their tank.

The mother had been kept in a private tank since November 2001 (when an ultrasound confirmed her pregnancy) to protect her offspring from the other sharks in the tank. Shortly after giving birth, Marsha was returned to the main shark tank, to ensure that she wouldn't eat her own young.



PHOTO: DONG LIN

Pam Schaller with a shark pup.

Software Gift from Microsoft

In December 2001, the Microsoft Corporation donated 300 Windows 2000 professional software licenses, 50 Office Mac licenses, and two servers with software worth nearly \$100,000, helping to keep the Academy's information systems up-to-date. Microsoft has been a major sponsor of the Academy for a number of years. The Academy shares Microsoft's mission to nurture a curiosity about the world around us in children and adults, and is delighted to acknowledge Microsoft's gifts to the institution.

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FOR MEMBERS ONLY

Botanical Heroes and the Flora of San Francisco



Dr. Tom Daniel

For years, the Academy has documented local plants in our extensive collections and publications. At the forefront of this effort is Dr. Tom Daniel, curator of botany and a 16-year Academy veteran. Dr. Daniel will talk about his current work and pay homage to the visionaries that helped to build (and rebuild) a major center of botanical research at the California Academy of Sciences.

Wednesday, April 10 2 & 7:30 pm
Morrison Auditorium
Free to members

Mother's Day

Academy members who are mothers, together with their families, receive free admission to the EXPLORATORIUM and the SAN FRANCISCO ZOO on this special day. Present your membership card at these facilities.

Sunday, May 12

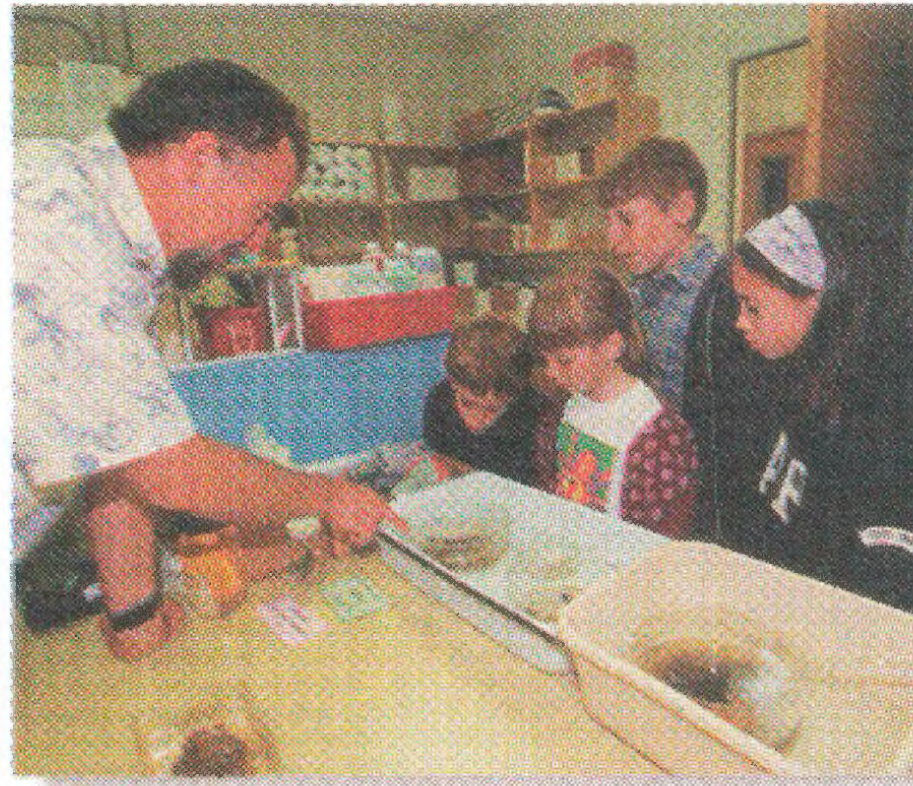
New Donor Circle Members

November through December 2001: \$125 to \$999
Many thanks to the following new donors and those who have increased their support of the Academy in the last few months.

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Ms. Nancy Yoneyama
Mr. & Mrs. Bowen Y. Wong
Mr. G. Robert Yee &
Mr. Charles E. Halfman

Members' Open House



Bob Van Syoc with Young Academy Members in Invertebrate Zoology and Geology.

It's that time of year again when the Academy opens its door for the Annual Members' Open House. You are invited to tour behind-the-scenes at the museum to see the inner-workings of the Academy's Research Departments. Take a look at our 16 million specimens and artifacts including fish,

bugs, gems, minerals, and anthropological collections—most of which the public never gets to see. View the Steinhart Aquarium fish from the other side of the tank. This is a special, exclusive night for Academy Members. Don't miss it.

During the Open House, the public floor will be open and the Cafe will be open from 6 to 8 pm.

Wednesday, May 8 6–9 pm
Main Floor/Basement Level/2nd Floor of the Academy

Members' Open House is an exclusive benefit of membership. This is a perfect time to invite your friends to become members so they may attend this event with you. Consider a gift membership, which offers year-round benefits and helps support education and research at the Academy of Sciences. Call (415) 750-7111, fax (415) 750-7346, or email: Membership@calacademy.org.

Powers of Ten and Other Eames' Philosophies

Eames Demetrios, exhibit producer, Powers of Ten, principal, Eames Office

Eames Demetrios will speak about designing the Powers of Ten exhibit (see page 4) and his recently completed book, *An Eames Primer*, which provides the first documentation of the design process of his grandparents, Charles and Ray Eames, producers of the famous 1977 film "Powers of Ten."

Wednesday, April 17 7:30 pm
Morrison Auditorium
\$6 members/\$8 non-members
Book signing to follow

Upcoming Members' Lectures & Events

**Astrobiology at the Academy:
the Biology of Desert Springs
with Dr. Carol Tang, Ph.D.
associate researcher, California Academy of Sciences
evolutionary paleoecologist
Wednesday, June 12 2 & 7:30 pm**

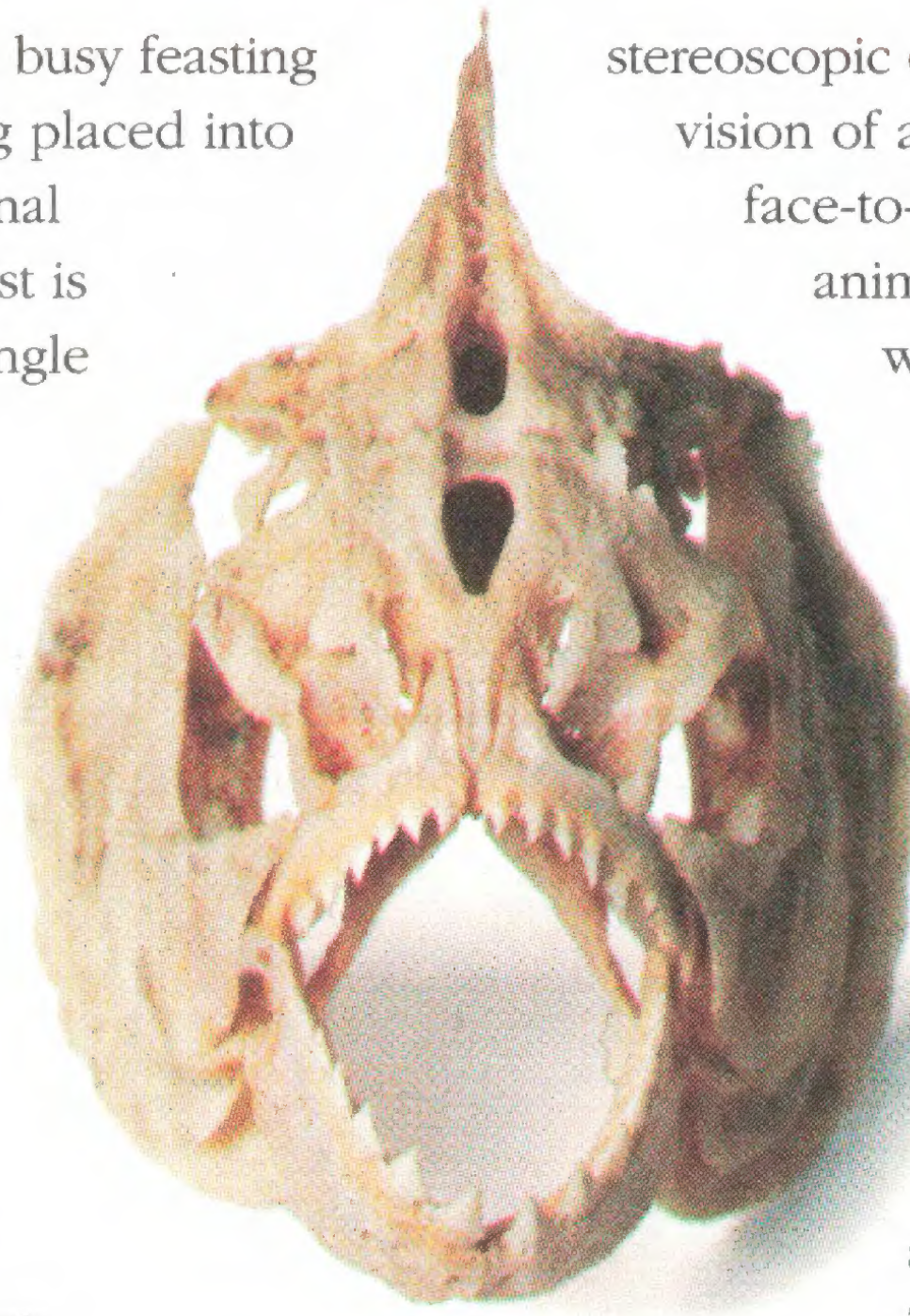
EXHIBITS

skulls

Opens March 30

Thousands of flesh-eating carrion beetles are busy feasting on dead heads. 860 sea lion skulls are being placed into a display that runs the length of a professional basketball court. One physical anthropologist is gazing 3.3 million years into the past at a single monkey. And nearly one million annual visitors are about to see more skulls than they have ever seen before.

On March 30, 2002, the Academy opens the doors to **skulls**, an exhibit featuring nearly 1,500 diverse dead heads, representing animals that range from mastodons and mice, to hawks and humans. These skulls, with their specialized structures, provide a bony blueprint to an animal's lifestyle. Visitors will learn to pick up these clues through a series of stunning displays. At the Predator/Prey Vision Demonstration, visitors can view the world through the



stereoscopic eyes of a mountain lion or with the peripheral vision of a pronghorn antelope. They will also come face-to-face with the diverse cranial adaptations animals have developed at the Skull Carousel, where they can superimpose an image of their own head onto the skulls of eight different animals.

skulls also takes visitors inside the heads of living creatures: researchers at the Academy. Visitors can learn about Dr. Nina G. Jablonski's efforts to reconstruct an extinct African monkey from fossil remains, or follow Dr. Douglas J. Long to California's Farallon Islands—a breeding site for fur seals that he is working to protect with the help of some historic fur seal skulls.

The Academy's newest exhibit is a strange and stunning show—come in, explore, and get inside our heads.

Photo Contest Winners

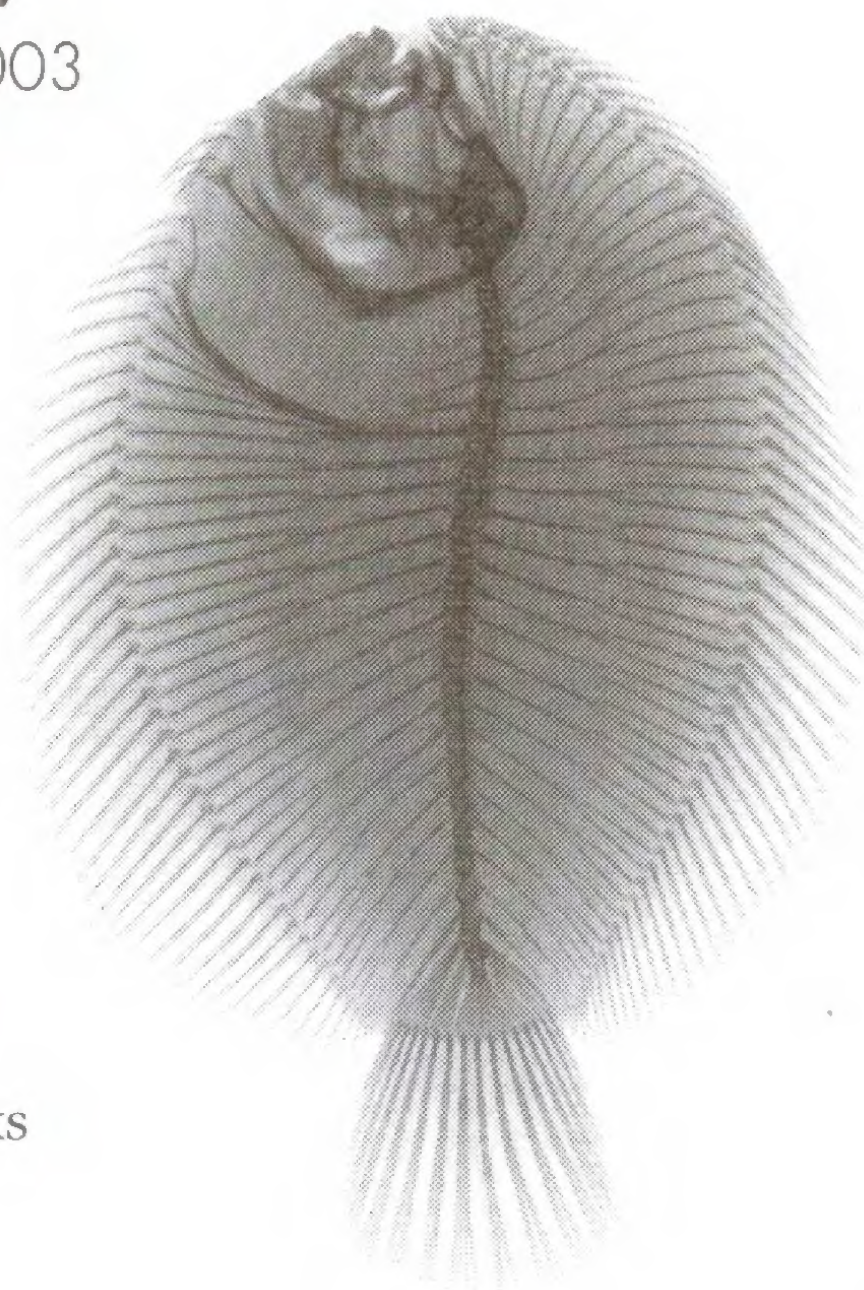
April 20, 2002–December 2002

From France to Fresno, children ages 6–18 have been busy submitting photographs to the Children's Photography Contest at the Academy. Come see the winning entries on display in Wild California Hall. Winning photos from a separate competition for Academy staff will also be featured.

X-Ray Ichthyology

March 2, 2002–early 2003

Prepare to look at fish in a whole new light. **X-Ray Ichthyology**, an exhibit at the Academy, captures forty-six fish from the Academy's ichthyology collection on X-ray film. Blown up and backlit, these large-format photographs transform scaly swimmers ranging from piranhas to guitarfish into eerie, luminescent works of art.



Powers of Ten

April, 2002–January 2003

Come visit a place where the farthest reaches of the universe and the familiar features of your own backyard are just a few steps—and a few zeros—apart.

Powers of Ten, an exhibit based on the landmark film by Charles and Ray Eames, will bring this exponential journey through time and space to the Academy.

Using a series of photographs, **Powers of Ten** explores 44 powers of ten, beginning with 10^{26} meters (the size of the known Universe) and ending at 10^{-18} meters (the size of the smallest known subatomic particles). At each station, videos and objects from the Academy's vast research collections allow visitors to investigate scientific discoveries relating to different powers of ten. For instance, at the 10^{25} station, visitors can touch a 4 billion year old meteorite. This artifact and others like it are sure to inspire a sense of wonder in visitors of all sizes. **Powers of Ten** will open in Spring 2002.



SKULLS PROGRAMS

How do They do That?

How do animals locate prey without seeing it or hearing it? How do they swallow prey bigger than their heads? Uncover the connection between skulls and animal skills in this family presentation.

Tuesdays in April & May 11:30 am & 1:30 pm

Bare Bones

Take a crash course on recognizing animals by their skulls. Learn important details used by experts to compare species. Examine a variety of skulls including those of humans, hyenas, turtles and rodents.

Thursdays in April & May
11:30 am & 1:30 pm

Skulls Assignment

Museum as the Classroom Project (MAC) is a new education program in which elementary school students set the curriculum.

Students from the Clarendon School have learned about skulls by designing exhibits in collaboration with Academy staff. They will give a public presentation in the **skulls** exhibit April 10, 11:30 am.

Fifth graders from the Jefferson School are participating in the MAC project this spring and their public presentation about what skulls can teach us will be held on May 23, 12:30 pm.



Bird Skulls

Meet a live toucan, touch real bird skulls and explore avian skull morphology, adaptations and conservation.

Saturday & Sunday, April 20 & 21
11:30 & 1:30 pm
Skulls Exhibit

Skulls Culture

Explore beliefs, practices, myths, and medical treatment associated with skulls around the world. Topics include the head shrinking in the Shuar sub-tribe of Jivaro Indians and Aztec skull burials.

Saturday, May 18 & 25, 11:30 am & 1:30 pm

Inside Skulls

Take an insider's tour of the Academy's new exhibit, **skulls**, from one of the curators. Learn the architecture of the skull, how skulls have evolved over millions of years and what

skulls can tell us about an animal's appearance and lifestyle—even if it is extinct. Suitable for families with children over 12.

Seminar

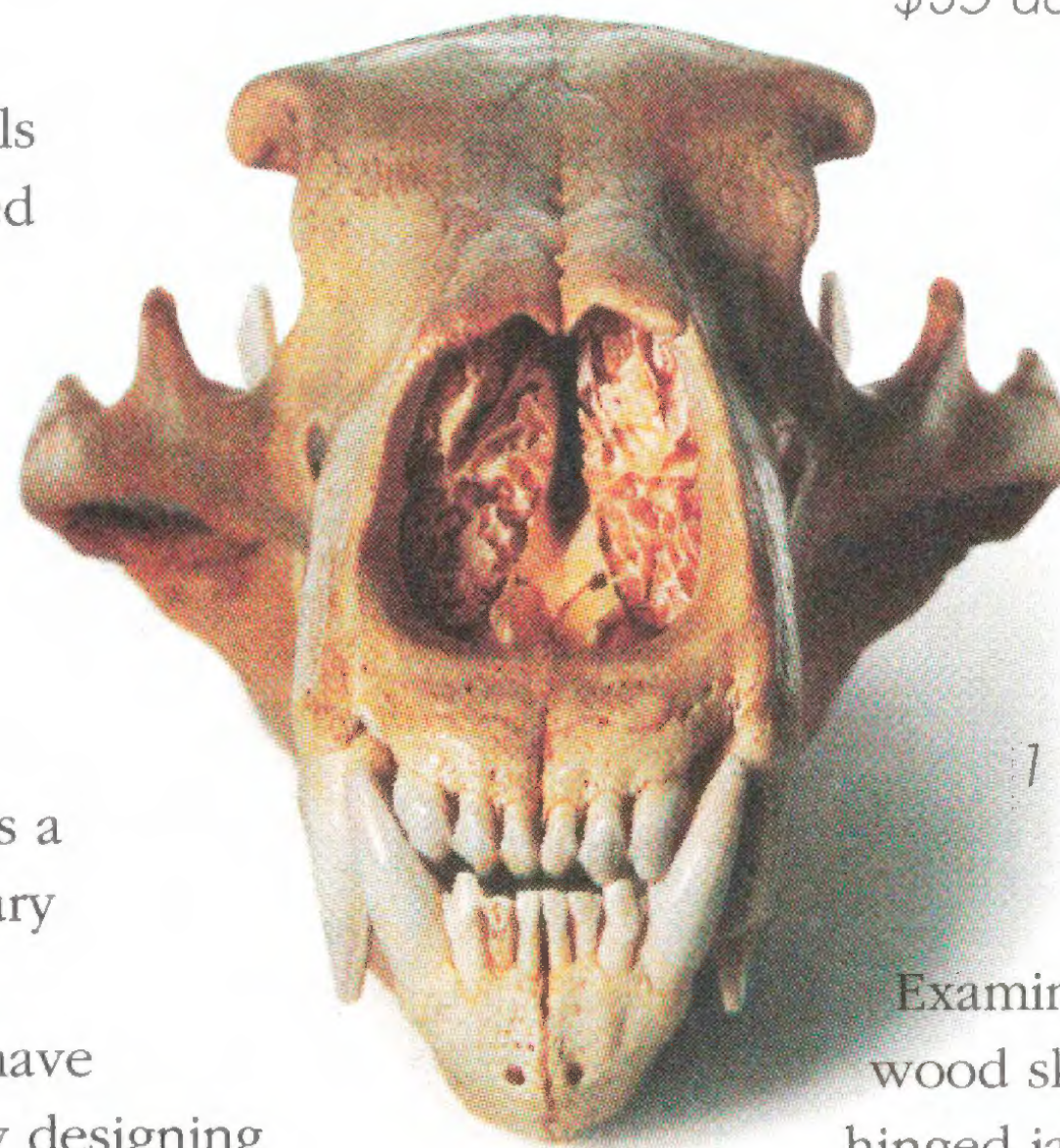
Dr. Nina Jablonski

Tuesday, April 23 (family class) or Tuesday, May 21 (adult class)

7-9 pm

\$30 adults/\$25 children, members

\$35 adults/\$30 children, non-members



Skull Detective

Join Academy naturalist Juan-Carlos Solis and examine mammal, bird, reptile and fish skulls. Look for clues that may reveal how the skull's owner lived. We'll look at samples of the food they may have eaten when they were alive.

Wednesday, April 24 & May 22
11:30 am & 1:30 pm

Make a Skull

Examine actual skulls and then make simple Balsa wood skull models complete with false teeth and hinged jaws. Learn how function dictates form, in this orthodontic adventure.

Saturday, April 6 & 27, May 4 & 11 11:30 am & 1:30 pm

Sunday, April 7 & 28, May 12 & 19 11:30 am & 1:30 pm

Marine Mammals

Join the Academy's Dr. Alejandro Acevedo-Gutierrez on a fun mini-lecture series for families as he explains the anatomy of marine mammal skulls. How can we tell dolphins apart from porpoises and seals apart from sea lions?

Wednesday, April 3 & 17 11:30 am & 1:30 pm

How Come Dolphins Are Always Smiling?

Dr. Alejandro Acevedo-Gutierrez will look at the modifications that have occurred in the skulls of dolphins in relation to the production and the reception of sound, and relate them to their perpetual smile.

Wednesday, May 1 & 29
11:30 am & 1:30 pm



Docent and Intern Carts

Academy docents and interns frequently will be on hand at the **skulls** exhibit to show and interpret skull specimens including real shark jaws and amazing replicas of extinct human ancestors.

LECTURES

California Academy of Sciences Conversations at the Herbst Theatre 2002

Presented by City Arts & Lectures, Inc.

Robert Sapolsky

Wednesday, April 24 8 pm Herbst Theatre

E.O. Wilson

The Annual Claire Matzger Lilienthal Distinguished Lecturer
in conversation with Penny Nelson

Thursday, May 9 8 pm Herbst Theatre

Luis Baptista Memorial Concert

See page 15 for program information.

Wednesday, May 22 8 pm Herbst Theatre

Tony Hillerman

In conversation with Roy Eisenhardt

Wednesday, May 29 8 pm Herbst Theatre

Gretel Ehrlich & Michael Pollan

in conversation with Renee Rothmann

Wednesday, June 5 8 pm Herbst Theatre

Lecture: \$16 members/\$18 non-members

Series: \$80 members/\$85 non-members

Baptista Special Event: \$40, \$60, \$75, \$125 (includes reception)

This series is made possible, in part, by a grant from the Richard and Rhoda Goldman Fund.

To order tickets, please call City Box Office at (415) 392-4400

The California Academy of Sciences **does not process ticket orders for these lectures.**

Prehistoric Art of the Chauvet Cave

Jean Clottes

Former Scientific Advisor for Prehistoric Art,
French Ministry of Culture

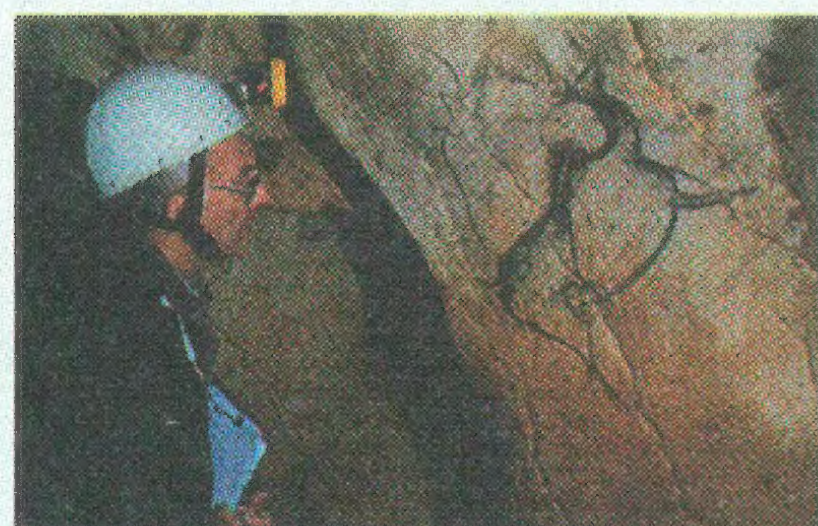


PHOTO: PH. MOREL

Dr. Jean Clottes examining the walls of the Chauvet Cave.

The Chauvet Cave, with its 422 animal figures, ranks among the most important painted caves in Ice Age art. The painting techniques are remarkably sophisticated, especially

considering that they are 30,000 years old. These discoveries have forced scholars to reevaluate the belief that art developed following a linear evolution from crude beginnings to sophisticated summits.

Thursday, April 4 7:30 pm

Morrison Auditorium

\$8 members/\$12 non-members



The Leakey Foundation

The Leakey Speaker Series on Human Origins

The California Academy of Sciences and the L.S.B. Leakey Foundation are pleased to continue the Leakey Speaker Series on Human Origins. We gratefully acknowledge the generous support of Wells Fargo Bank, the series' principal sponsor, as well as the Leakey Foundation Fellows and Abercrombie & Kent.

Climate and Human Evolution in the European Late Pleistocene

Leslie Aiello

Director, Anthropology Department,
University College London

By examining ancient weather patterns and the geography of Neanderthal and Homo sapien archeological sites, Dr. Aiello suggests that cold weather and the development of cultural means to deal with it may have affected the course of human evolution 45,000 to 60,000 years ago.

Thursday, April 25 7:30 pm

Morrison Auditorium

\$8 members/\$12 non-members/\$6 students

Feast, Famine, and Fertility: How Orangutans Cope with an Uncertain World

Cheryl Knott

Assistant Professor of Anthropology, Harvard University

The orangutan is the largest arboreal mammal, has the longest birth intervals, and has the highest rate of forced copulations. In this lecture, Dr. Knott explores the evolution of these fascinating social and reproductive phenomena, and how they relate to the unique ecology of Borneo and Sumatra. She also explores how orangutan adaptations shed light on human evolution.

Thursday, May 23 7:30 pm

Morrison Auditorium

\$8 members/\$12 non-members/\$6 students

Library Conference

The annual Council on Botanical and Horticultural Libraries Conference, Plants and People: A Regional Perspective, will be held April 8-13, 2002. For more information, call (415) 661-1316 ext. 303.

TRADITIONAL ARTS OF THE WORLD

Traditional Arts presentations are free after admission and no reservations are needed. For further information, contact Dr. Jennifer Michael at (415) 750-7165, or visit www.calacademy.org/research/anthropology/tap. The Traditional Arts Program is funded by the Paul L. and Phyllis Wattis Foundation.

Nigerian Sculpture (Artist In Residence)

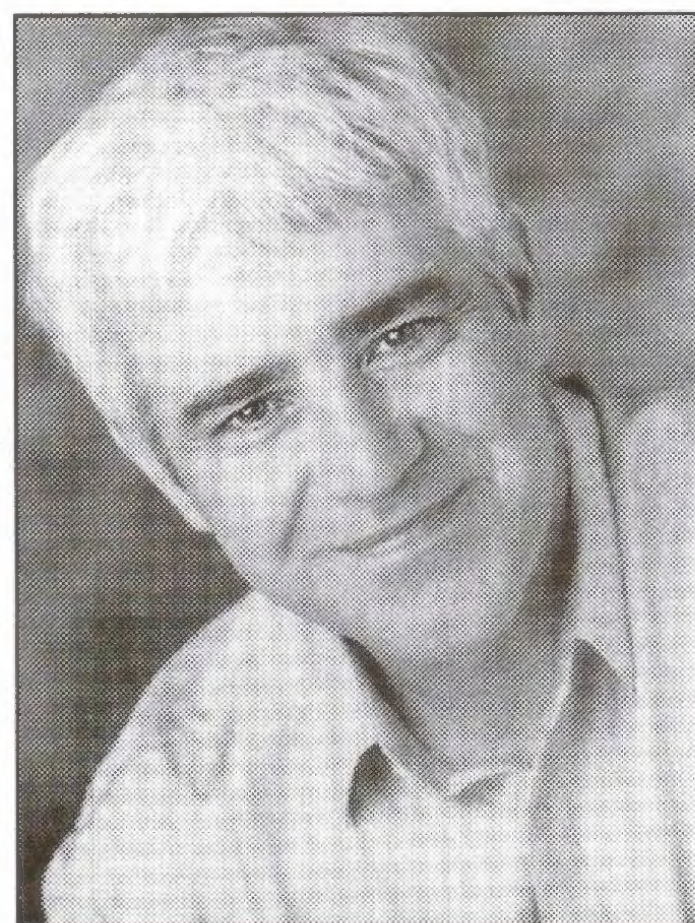
Nigerian artist Geoffrey Nwogu has been at the Academy since January working on a sculpture installation in Cowell Hall. Mr. Nwogu is creating a family of three deity figures modeled from mud clay, in front of a decorative mbari house customarily built as an offering to the gods in Igboland, Nigeria. The work will finish Saturday, March 30. This project is supported by the Creative Work Fund, which supports collaborations between local artists and non-profit institutions.

Wednesdays through Saturdays, ongoing through March 30
10am-4pm
Cowell Hall

Unknown Scotland

Have you ever wondered what a Scotsman wears under his kilt? Or how Scotch whiskey is made? Or what's in a haggis? These and other questions of Scottish history and culture will be answered in this program. Scottish musician, storyteller, and educator Neil O'Neill brings us lively anecdotes, history, songs and poetry of his native land.

Saturday, April 6 1pm
Morrison Auditorium



Neil O'Neill reveals the secrets of unknown Scotland.

Recycled Rhythms

Saturday, April 20 Noon (see page 10)

Scottish Dance Traditions

The Dunsmuir Scottish Dancers, under the direction of Ron Wallace, will perform highland dances, ladies step dances,

jigs, reels, airs and strathspeys to the accompaniment of live music—piano, fiddle, recorder, guitar and bagpipes.

Saturday, May 4 1pm
Morrison Auditorium

West African Music & Dance

The Kucheza Ngoma troupe specializes in dance and drumming from West Africa. Their beautifully choreographed pieces, with live

drumming and singing, reflect both African Forms and New World influences, resulting in a performance that highlights the richness of the African Diaspora.

Saturday, May 25 1pm
Morrison Auditorium

Asian Pacific American Heritage Month

All programs are free after museum admission unless otherwise noted. For more information, check www.calacademy.org or call (415) 750-7145.

Japanese Gift Wraps

In traditional Japanese culture, objects are never transported openly but are always enveloped in some fashion. This practice, based on a defined notion of discretion, has led to the development of styles of wrapping specific to certain objects. In this program, artist Vicky Mihara demonstrates the Japanese art of wrapping objects in paper and fabric.

Saturday, May 11 1pm
Cowell Hall

Sounds of Vietnam

Join the Khac Chi ensemble and feel the rhythm of traditional Vietnamese music. Khac Chi, features an exquisite mixture of rare instruments unique to Vietnam, such as the chum nhac, a percussion instrument, and the t'rung (a suspended bamboo xylophone). The ensemble's combination of musical virtuosity and sheer entertainment has taken them around the world.

Adults only performance.

Under the Stars in the Morrison Planetarium

Saturday, May 11 6:30pm Reception/7:30pm Concert

\$6 members/\$8 non-members

For tickets call (415) 750-7127 (There will be one intermission)

Family performance

Sunday, May 12 1pm

Morrison Auditorium

Free after Admission (Seats available on a first-come-first-serve basis)



Khac Chi Ensemble

PHOTO: LOYD AGENCY

The Soft Sounds of the Jaw Harp

The jaw harp is a musical instrument made of metal, wood, or bamboo and known in various forms throughout much of the world. In this program, musician and scholar Steev Rothman Kindwald discusses and demonstrates jaw harps from South and Southeast Asia.

Saturday, May 18 1pm
Morrison Auditorium



Kucheza Ngoma Dance Troupe

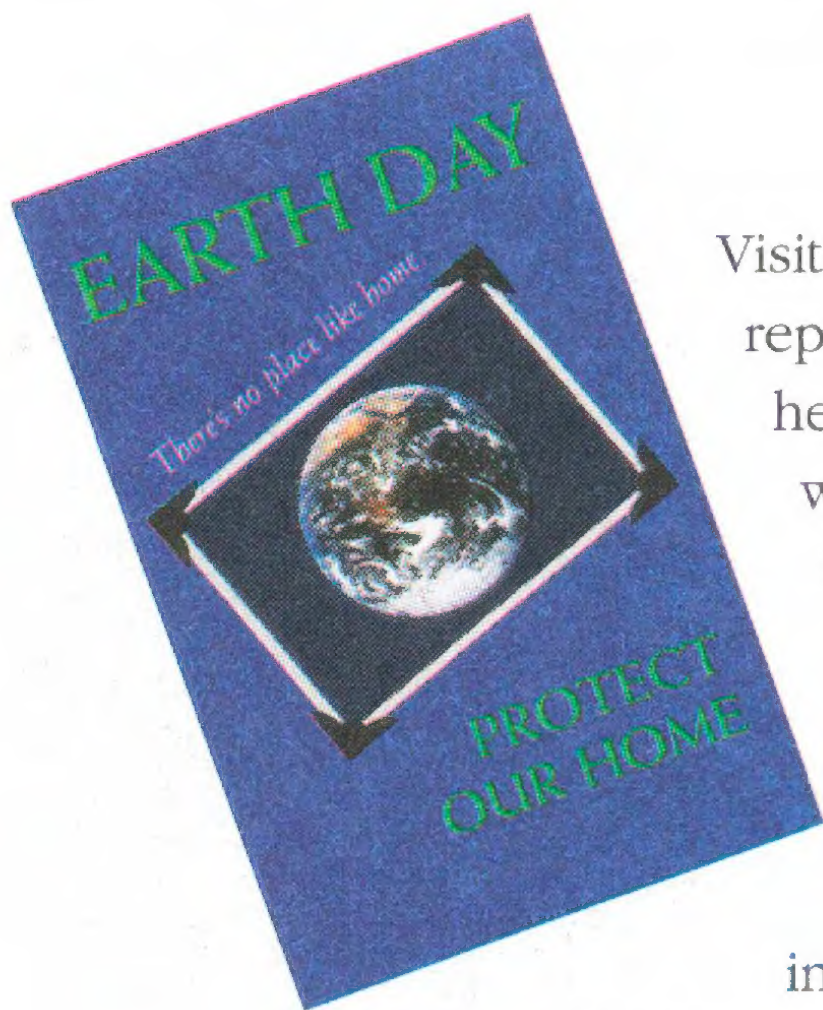
April 2002 at the Academy

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 AS Skies of Spring p. 12 1922 Construction of Steinhart Aquarium begins	2 FP Marine Mammals 11:30 am & 1:30 pm p. 5	3 FP Bare Bones 11:30 am & 1 pm p. 5 L Prehistoric Art of the Chauvet Cave 7:30 pm p. 6	4 FP Bare Bones 11:30 am & 1 pm p. 5 L Prehistoric Art of the Chauvet Cave 7:30 pm p. 6	5 FP Make a Skull 11:30 am & 1:30 pm p. 5 FP Unknown Scotland 1 pm p. 7 AT Natural History of Angel Island p. 12	6 FP Make a Skull 11:30 am & 1:30 pm p. 5 FP Unknown Scotland 1 pm p. 7 AT Natural History of Angel Island p. 12	7 FP Make a Skull 11:30 am & 1:30 pm p. 5 AT Natural History of Angel Island p. 12
8 FP How do they do that? 11:30 am & 1:30 pm p. 5 L The Next Generation of Ultra-Violet and Optical Telescopes in Space 7:30 pm p. 13	9 FP How do they do that? 11:30 am & 1:30 pm p. 5 L The Next Generation of Ultra-Violet and Optical Telescopes in Space 7:30 pm p. 13	10 FP Bare Bones 11:30 am & 1 pm p. 5 L Botanical Heroes and the flora of San Francisco 2 & 7:30 pm p. 3 FP MAC Presentation 11:30 am p. 5	11 FP Bare Bones 11:30 am & 1 pm p. 5 L Botanical Heroes and the flora of San Francisco 2 & 7:30 pm p. 3 FP MAC Presentation 11:30 am p. 5	12 FP Bare Bones 11:30 am & 1 pm p. 5 L Botanical Heroes and the flora of San Francisco 2 & 7:30 pm p. 3 FP MAC Presentation 11:30 am p. 5	13 FP Bare Bones 11:30 am & 1 pm p. 5 L Botanical Heroes and the flora of San Francisco 2 & 7:30 pm p. 3 FP MAC Presentation 11:30 am p. 5	14 FP Make a Skull 11:30 am & 1:30 pm p. 5 AT Natural History of Angel Island p. 12
15 1850 City of San Francisco incorporated	16 FP How do they do that? 11:30 am & 1:30 pm p. 5 L Powers of Ten and other Eames' Philosophies 7:30 pm p. 3	17 FP Marine Mammals 11:30 am & 1:30 pm p. 5 L Powers of Ten and other Eames' Philosophies 7:30 pm p. 3	18 FP Bare Bones 11:30 am & 1 pm p. 5 1906 San Francisco Earthquake and Fire	19 FP Bare Bones 11:30 am & 1 pm p. 5 1906 San Francisco Earthquake and Fire	20 FP Bare Bones 11:30 am & 1 pm p. 5 1906 San Francisco Earthquake and Fire	21 FP Make a Skull 11:30 am & 1:30 pm p. 5 AT Natural History of Angel Island p. 12
22 FP How do they do that? 11:30 am & 1:30 pm p. 5 FC Inside Skulls 7-9 pm p. 5	23 FP How do they do that? 11:30 am & 1:30 pm p. 5 FC Inside Skulls 7-9 pm p. 5	24 FP Skull Detective 11:30 am & 1:30 pm p. 5 L Robert Sapolski 8 pm p. 6	25 FP Bare Bones 11:30 am & 1 pm p. 5 L Climate and Human Evolution in the European Late Pleistocene 7:30 pm p. 6	26 FP Bare Bones 11:30 am & 1 pm p. 5 L Climate and Human Evolution in the European Late Pleistocene 7:30 pm p. 6	27 FP Make a Skull 11:30 am & 1:30 pm p. 5 FT Great Blue Herons of Golden Gate Park p. 12	28 FP Make a Skull 11:30 am & 1:30 pm p. 5 AT Natural History of Angel Island p. 12
29 FP How do they do that? 11:30 am & 1:30 pm p. 5	30 FP How do they do that? 11:30 am & 1:30 pm p. 5	31 FP How do they do that? 11:30 am & 1:30 pm p. 5	32 FP How do they do that? 11:30 am & 1:30 pm p. 5	33 FP How do they do that? 11:30 am & 1:30 pm p. 5	34 FP How do they do that? 11:30 am & 1:30 pm p. 5	35 FP How do they do that? 11:30 am & 1:30 pm p. 5
The California Academy of Sciences is open 365 days of the year.						

May 2002 at the Academy

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5 1977 Fish Roundabout dedicated, the first tank of its kind in the nation	6 	7 FP How do they do that? 11:30 am & 1:30 pm p. 5 L X-ray Telescopes: Present and Future 7:30 pm p. 13	1 FP How come Dolphins are always smiling? 11:30 am & 1:30 pm p. 5 AC Naming and Classifying Species Through the Ages 7 pm p. 12	2 FP Bare Bones 11:30 am & 1 pm p. 5	3	4 FP Make a Skull 11:30 am & 1:30 pm p. 5 FP Scottish Dance Traditions 1 pm p. 7
12 S Mother's Day p. 3 FP Sounds of Vietnam Family Performance 1 pm p. 7 FP Make a Skull 11:30 am & 1:30 pm p. 5	13	14 FP How do they do that? 11:30 am & 1:30 pm p. 5	8 S Members Open House 6-9 pm p. 3	9 FP Bare Bones 11:30 am & 1 pm p. 5 L E. O. Wilson 8 pm p. 6	10	11 FP Make a Skull 11:30 am & 1:30 pm p. 5 FP Japanese Gift Wraps 1 pm p. 7 S Sounds of Vietnam 6:30 pm p. 7
19 FP Make a Skull 11:30 am & 1:30 pm p. 5	20	21 FP How do they do that? 11:30 am & 1:30 pm p. 5 AC Inside Skulls 7-9 pm p. 5	22 FP Skull Detective 11:30 am & 1:30 pm p. 5 S Luis Baptista Memorial Concert, Herbst Theatre 8 pm p. 15	23 FP Bare Bones 11:30 am & 1 pm p. 5 L Feast Famine and Fertility: How Orangutans Cope with an Uncertain World 7:30 pm p. 6	24 	25 FP Skulls Culture 11:30 am & 1 pm p. 5 FP West African Music & Dance 1 pm p. 7 1958 Whale Fountain dedicated
26	27	28 FP How do they do that? 11:30 am & 1:30 pm p. 5 AC Living on the Edge: The Peoples of Nepal 7 pm p. 12	29 FP How come Dolphins are always smiling? 11:30 am & 1:30 pm p. 5 L Tony Hillerman 8 pm p. 6	30 FP Bare Bones 11:30 am & 1 pm p. 5	31	

EARTH DAY FESTIVAL 2002



Protect Our Home

Saturday & Sunday, April 20 & 21

Visit the Academy anytime of day on both April 20 and 21 and be delighted by juggling routines, reptile rendezvous and insect encounters. Meet non-profit exhibitors who can show you ways to help protect our home. Tell your friends that visitors who arrive by bike or bus get in free this weekend just for conserving energy! Bring your own bike and we will park it for free in secure bike parking near the front entrance.

Recycled Rhythms

Groove to the beat! Pacific Sticks brings new meaning to the term acoustic. Dance with them in the morning, and then join them for making your own recycled instruments and a group jam in the afternoon (see below).

Saturday, April 20 Noon
Front Porch or Cowell Hall

Drop-in Workshop: Make Your Own Percussion Instrument!

Join this fun family workshop and take home your own drum! Space is limited, one adult per child with instrument, please.

Saturday, April 20 2 pm
Goethe Room

Bats Alive

Explore the wild side of bats as Patricia Winters, A.K.A. "Batmam," from California Bat Conservation Fund, speaks about their intriguing habits and conservation.

Saturday, April 20 3:30 pm
Goethe Room

Home is Where the Herps Are

Meet naturalist Chris Giorni and come face-to-face with a six foot boa, leaping tree frogs, green iguanas, nimble newts, and swimming turtles. From global amphibian decline to snakes in the Amazon, herps help us track and understand changes in our environment.

Sunday, April 21 11:30 am & 2 pm
Goethe Room

Earthcapades



Earthcapades juggling team

Earthcapades juggling team will use audience participation and improvisation to creatively demonstrate how you can make a difference in the future of our environment. Enjoy their walk around juggling routine all day in Cowell Hall and join them for a mini street-show in our Courtyard in the afternoon.

Saturday, April 20 &
Sunday, April 21 3 pm

VOLUNTEER PROFILE: AL SHELL



Al Shell

"I came here for selfish reasons," were the first words Al Shell said when asked how he got involved with the Academy in 1973. Fortunate to be able to retire in his forties, Al, along with his wife Marty, traveled the world with camera in hand to document their explorations. Unfortunately, when it came to describing his travels he realized he could name few of the animals and plants he had so carefully photographed.

Joining the Academy's docent program changed all that. Not only did Al pick up the science education he missed when he left college prematurely to join the army in 1942, he also acquired an Academy family he still talks about with great affection. Al was inspired by the instruction, and this heightened awareness now meant his travels took on a new and deeper meaning.

"I found a need and filled it," Al says of his second volunteer career videotaping the docent classes. Now, after 15 years of taping, he estimates he has taken every docent class at least three times. Chuckling, he modestly resists the notion that he knows everything.

Al, at 83, is an inspiration himself. Few can say as he does, "There's hardly anything now that isn't an improvement over the past." He has great expectations for the new Academy, is confident that he'll play a part in its evolution, and is grateful to give back.

THEN & NOW

In Retrospect...

By Michele Welck, Academy Archivist

25 Years Ago in These Pages

May 5, 1977 – Fish Roundabout dedication – “The completion of the Fish Roundabout addition was the major event of the year, and indeed of the aquarium’s 54 years of public service since its opening in 1923. The Roundabout added a new dimension to American aquarium displays. The concept was that of the late Earl S. Herald and Trustee Wilson Meyer, to



PHOTO: (N5172G) SPECIAL COLLECTIONS/CAS LIBRARY

create an environment for pelagic, or open ocean, fishes. The facility was a gift from the G. H. C. Meyer Family Foundation. More than a ton of fast-swimming fishes were introduced into, and are now swimming through, the infinite water world created by the ring design.”

Our Fish Roundabout was the first ring tank in the Americas. According to Dr. John McCosker, “open ocean, or pelagic, fishes neither tolerate nor comprehend confinement, and the end result, after several

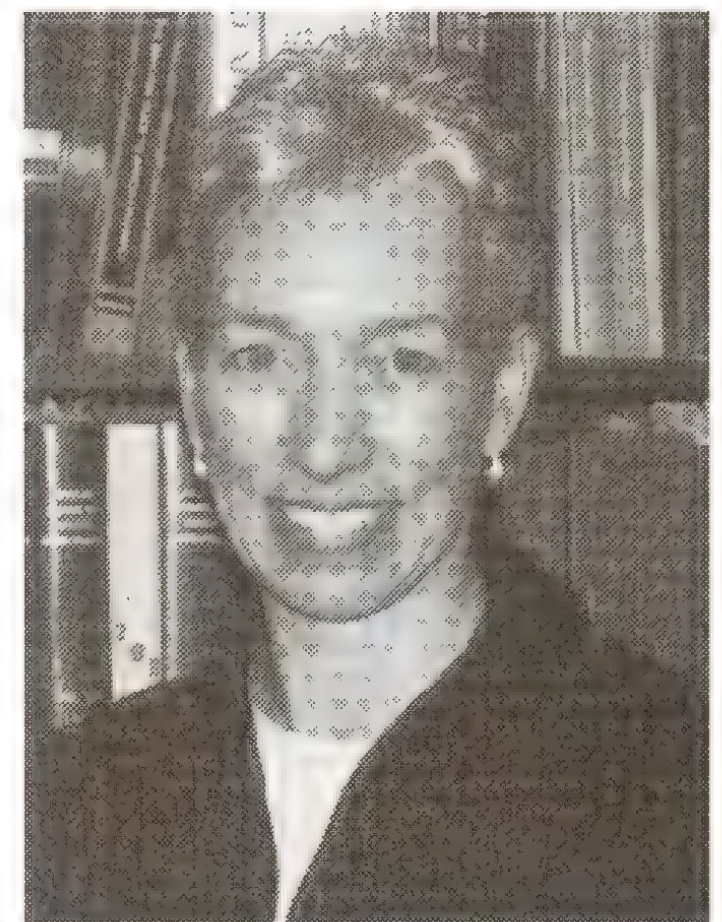
high-speed collisions with the walls of an aquarium, is usually a dead fish.” Our “infinite envelope of sparkling oceanic water” neatly addressed that problem and gave our non-diving aquarium visitors a chance to see what it would be like to be under the surface of the open sea. (As evidenced by the Roundabout’s receipt of the 1995 “Best of the Bay” award for Best Place to Make Out, not all of our visitors are paying attention.)

Just like an airplane taking off into the wind, our streamlined fish have much better control over their direction when they swim into the one-knot current. The 100,000 gallons of water in the Roundabout system are pumped to the aquarium from Ocean Beach, and water temperatures vary with the season from the low 50s to the high 60s. (At the time of the Roundabout’s construction, the nation was in the midst of an energy crisis and it was decided that we would not heat the Roundabout’s water.) As the water temperature changes, so does the activity level and appetite of the inhabitants—their daily feeding varies from 40 lbs (in colder water) to 100 lbs (in warmer water) of frozen fish.

IN RETROSPECT, cont. on pg. 13

In Research...

Nina Jablonski is the Curator and Irvine Chair of Anthropology at the Academy. Although she has dedicated the majority of her research to Old World monkeys, Jablonski has also collaborated with her husband, George Chaplin, to study the evolution of human skin color and bipedalism. On February 15, she hosted a symposium at the American Association for the Advancement of Science’s annual meeting about the effects of solar ultraviolet radiation on evolution.



Nina Jablonski

Stephanie Greenman: Why did you organize a symposium about ultraviolet radiation?

Nina Jablonski: Solar ultraviolet radiation (UVR) is one of the most influential factors affecting the evolution of life on Earth. The reason that we organized this symposium now is that many different fields, from remote sensing to protozoology to epidemiology, are providing new insights into the effects of UVR. By studying the effects of changing UVR levels in the past, we may be able to predict the impact of increased UVR levels due to recent ozone depletion.

SG: How have organisms adapted to cope with UVR in the past?

NJ: That is a very big question, and I can only answer a small part of it! One of the most important adaptations to UVR that we see in animals is protective pigmentation. Many animals, including humans, utilize melanin as a natural sunscreen. Human melanin levels must be delicately balanced so as to maximize health and reproductive success. Too much UVR exposure breaks down some of the body’s B vitamins, while insufficient UVR exposure prevents the production of vitamin D3. Because of these factors, darker skin tones evolved in areas of the world that have higher UVR levels, while light skin developed in geographic zones with much lower UVR levels.

SG: What threats does ozone depletion present to life on Earth?

NJ: Depletion of the ozone layer threatens many basic aspects of life because greater amounts of UVR will penetrate the atmosphere. Most organisms will be unprepared for this. Plant and crop growth will be adversely affected, production of phytoplankton in the oceans will drop, the early developmental stages of aquatic animals will be damaged, and levels of greenhouse gases in the atmosphere will become increasingly imbalanced. Humans will experience higher levels of non-melanoma skin cancers and cataracts, and many of the things we manufacture, like synthetic polymers, will break down. It is a worrying constellation of problems.

FIELD TRIPS, SEMINARS AND WORKSHOPS

The courses listed below are just a few of the many unique opportunities for exploring the natural world that Youth and Adult Education offers. For a copy of our course catalog or more information, call (415) 750-7100 or visit www.calacademy.org/education.

Skies of Spring

Adult Seminars

The key to finding your way around the night sky is locating key constellations or star groups and using them to place other less distinct objects. From the comfort of Morrison Planetarium, learn to locate Leo the lion, Virgo the maiden, Cancer the crab, and Hydra the sea serpent, and find out the legends surrounding each in this popular, seasonal star-watching course.

Darryl Stanford

Three Mondays: April 1, 8 & 15 7–9 pm

\$40 members/\$45 non-members

Natural History of Angel Island

Adult Field Trip

Angel Island is one of the first places in the Bay Area named by European settlers. It is home to historic military garrisons and a former immigration station. Spend a delightful day on the San Francisco Bay island interpreting the natural and man-made landscape by studying its history, geology, climate, and vegetation, as well as its bird life. Expand your appreciation and knowledge of this fabulous natural habitat right here in the heart of the Bay.

Gary Holloway and Dan Murphy

Saturday, April 6 or Sunday, April 7 9:30 am–4:30 pm

\$40 members/\$45 non-members

(This price does not include Tiburon ferry fee.)

Great Blue Herons of Golden Gate Park

Family Field Trip

Take an up-close look at San Francisco's largest nesting waterbirds at 4-feet tall with a 6-foot wingspan. Since 1993, great blue herons have been nesting and raising their chicks in Golden Gate Park. After a video introduction, examine the beaks, bones, feathers, and eggs of these prehistoric-looking birds to learn about their lifestyle. Then walk to a special viewing area, and use binoculars and spotting scopes to observe the herons' nesting activities. Start a nature journal by sketching and



Blue heron

recording your observations, and conclude with a hike to discover other wildlife. For families with children ages 7 and up.

Nancy DeStefanis

Saturday, April 27 9 am–noon

\$25 adults/\$20 children, members

\$30 adults/\$25 children, non-members

Naming and Classifying Species Through the Ages

Adult Seminar

Systematics—naming plants and animals and classifying them into groups—is at the core of natural history. Learn how scientists developed systematics and how they influenced one another through the ages. In the first seminar, go back to the world of Aristotle and Theophrastus, and trace the discipline's development through the middle of the 19th century. Then explore in the second seminar the basis of the Darwinian theory of evolution, and conclude with Willi Hennig's principles for classifying higher groups of organisms.

Benoît Dayrat

Two Wednesdays: May 1 and 15 7–9 pm

\$30 members/\$35 non-members

Captive Coral Reefs

Adult Seminar and Behind-the-Scenes Tour

This introduction to the biology and husbandry of corals emphasizes the methods used to develop and maintain the Steinhart Aquarium's Living Coral Reef exhibit and coral propagation facility. A behind-the-scenes tour offers a rare glimpse into the workings of a large public aquarium reef tank and includes an on-site explanation of system design, life support, and water-quality management.

William 'Bart' Shepherd

Thursday, May 16 6:30–9 pm

\$20 members/\$25 non-members

Living on the Edge: The Peoples of Nepal

Adult Seminar

The Himalayan Kingdom of Nepal is a rich tapestry woven from the colorful threads of its diverse cultures. View slides from Rasori's new photography exhibit on Nepal's vibrant cultures, and discuss the social and political challenges of the coming decade. This is his 11th nationally traveling exhibit showcasing the world treasure of cultures that are now struggling for survival. His images bear witness to—and protest—the dangers affecting folkways, and document cultures that may already be irretrievably lost.

Philip C. Rasori

Tuesday, May 28 7–9 pm

\$20 members/\$25 non-members

MORRISON PLANETARIUM

Above Us

All five “naked-eye” planets are visible in the evening twilight from mid-April through mid-May. Mercury, Venus, Mars, Saturn and Jupiter will make a “string of pearls” along which the Moon will travel from April 13–18. Watch as they rearrange into a tighter group in early May, meeting up with the Moon again from May 13–16. Contact the Planetarium for more information at (415) 750-7141, or visit www.calacademy.org/planetarium.

Dean Lecture Series Spring 2002: “The Multi-colored Sky”

The Benjamin Dean lecture series for Spring 2002, analyzes the universe across the entire spectrum of electromagnetic energy received on Earth—radio, microwave/infrared, optical/ultraviolet, X-rays and Gamma Rays. The series has already discussed radio and infrared. Join us in April as we look at the shorter wavelengths of the optical and Ultraviolet regions of the spectrum and X-radiation.

The Next Generation of Ultra-Violet and Optical Telescopes in Space

Dr. Mike Shull

Chair, Astrophysical and Planetary Sciences,
University of Colorado

Even as the Hubble telescope makes exciting new discoveries, the US is already planning the next major steps in Ultraviolet and Optical space astronomy. Dr. Schull will discuss upcoming improvements to Hubble and the next generation being planned for launch after 2010.

Tuesday, April 9 7:30 pm

X-ray Telescopes: Present and Future

Dr. Harvey Tananbaum

Harvard University and the High Energy Astrophysics
Division at the Smithsonian Astrophysical Observatory

Dr. Tananbaum will review and interpret recent high-resolution images of the X-ray sky from the Chandra X-ray Observatory. He also will outline the proposed Constellation-X mission, an array of X-ray satellite telescopes that will be 100 times more powerful than any single previous X-ray telescope. This project is key to unlocking such mysteries as black holes, general relativity, and missing matter.

Tuesday, May 7 7:30 pm

Lectures are held in the Planetarium. Tickets are \$3 and are available in advance through the Planetarium or at the door. Please call (415) 750-7127 for more information. This series will conclude with: Dr. Valerie Connaughton speaking on Gamma Ray Astronomy – Tuesday, June 4.

Astronomy Day

Saturday, April 20, bring your astronomical questions to the Academy. Weather permitting, get a safe “up close” view of the Sun, then visit astronomical displays staffed by local amateur astronomy clubs. This program is held in honor of the Earth Day Festival, see page 10 for more Earth Day Programs.

Sky Shows

Stargazer's Guide to the Galaxy

What is that misty band of light that crosses the dark night sky and what wonders does it hold for the keen-eyed stargazer?

April 1–May 31, Weekdays: 2 pm, Weekends: 2 & 3 pm
Through September 8

The Living Universe

Find out how nature distributes and recycles the stuff of life throughout the cosmos and explore the fascinating ways that life endures on Earth...and possibly beyond!

April 1–April 5, Weekdays: 12:30 pm
April 7–May 31, Weekends: 1 pm
Through June 16

What's Up?

In this show for families, explore the sky and some of its wonders: the Sun, the Moon, the constellations, and the planets!

April 1–May 31, Weekends: 12 pm
Ongoing

The Sky Tonight

A relaxing tour of the current night sky, focusing on constellations, visible planets, the phase of the Moon, and upcoming celestial events visible with the unaided eye.

April 1–April 5, Weekdays: 3:30 pm
April 6–May 31, Weekends: 4 pm
Ongoing

Schedules are subject to change. Shows will be added to the schedule on the first Wednesday of each month and on certain holidays.

IN RETROSPECT, cont. from pg. 11

When the Roundabout opened, it was home to a school of yellowtail and striped bass, and an assortment of local sharks from San Francisco Bay. Over the years, it's also held such residents as red snapper, white sea bass, eastern sand tiger sharks, amberjack, giant sea bass, white sturgeon, 6-gill and 7-gill sharks, barracuda, bluefish, and an unprecedented great white shark (for four days in 1980). These days, the residents are strictly pelagic fishes, including three pelagic rays (Morticia (the dark one), Ghost (the pale one), and Randy (the small, umm, “friendly” one)).

ACADEMY TRAVEL 2002

The Galápagos

November 15–24, 2002

Aboard the *Polaris* with Meg Burke



Iguana

To set foot on the remote islands of the Galápagos is to return to a primeval age. Explore these islands aboard Lindblad Expeditions' intimate, 80-passenger *Polaris*, a top-notch, recently refurbished expedition ship. High points include Floreana: with colonies of sea-lions and a lagoon where pink flamingos often feed; Santa Cruz: headquarters of the Darwin Research Station and a chance for close encounters with tortoises in the wild; Isabela: home of the Galápagos Penguin; and Española: home to the waved Albatross.

Cost: \$2,335 to \$3,855 per person, based on double occupancy + airfare. Singles: \$3,232 to \$3,900 + airfare. The pricing above reflects a special 25% discount off the regular price.

Land Exploration of Vietnam and Cambodia

February 22–March 9, 2003

Optional Post-Trip Extension to Laos, March 8–13, 2003

With John and Pam McCosker

This trip takes you to Vietnam and Cambodia with an optional extension to Laos: three fascinating countries which, because of early Hindu and Chinese cultural and artistic influence, became known as Indochina. You begin in Hanoi before driving to Halong Bay, cruising in and among its amazing monolithic karsts. On to Hue, old Vietnam's imperial and cultural capital, set beside the Perfume River. Driving on gorgeous mountain roads, you head to Danang for two nights at China Beach. A morning flight takes you to bustling Ho Chi Minh city for a day of sightseeing before the flight to Angkor Wat. You end in peaceful, bucolic Laos, with stays in the tiny capital of Vientiane and in Luang Prabang.

Cost: \$5950 per person (based on double occupancy) + airfare. Single supplement \$1045 per person. Laos extension \$1045 per person (based on double occupancy) + airfare. Single supplement \$200 per person

For information call the Academy Travel office at (800) 853-9372 or (650) 365-6244. Email calacademy@hcaptravel.com.



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LECTURES & EVENTS

QTY MEMBERS

QTY NON-MEMBERS/STUDENTS

TOTAL

To purchase tickets by phone, call (415) 750-7128.

Prehistoric Art of the Chauvet Cave	_____ X\$8	_____ X\$12	= _____
Climate and Human Evolution	_____ X\$8	_____ X\$12/\$6	= _____
Feast, Famine and Fertility	_____ X\$8	_____ X\$12/\$6	= _____
The Next Generation of Ultra Violet and Optical Telescopes:	_____ X\$3	_____ X\$3	= _____
X-ray Telescopes: Present and Future:	_____ X\$3	_____ X\$3	= _____
Powers of Ten	_____ X\$6	_____ X\$8	= _____
17th Annual Academy Ball	_____ X\$300	_____ X\$300	= _____

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Mail payment and order form to: Membership Office, Ticket Services, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118. Include a self-addressed, stamped envelope for each series to which you subscribe. No refunds/exchanges.

EVENTS & GIFTS

Earth, Ocean, Space

17th Annual Academy Ball



PHOTO: CHARLOTTE HORITO

Academy Ball 2001

On Friday, May 17, the Academy will once again be dressed in party finery for the 17th Annual Academy Ball, "Earth, Ocean, Space." Seven hundred guests will enjoy cocktails, champagne and hors d'oeuvres by Dan McCall and Swan Oyster Depot. A seated dinner by McCalls will be served in African Hall, Steinhart Aquarium and Wild California Hall, followed by a fabulous dessert buffet and dancing to the Rich Martini Orchestra in the tented Central Courtyard. Costumed characters and talented actors will provide entertainment throughout the evening.

This year's Dinner Chairs are Christine Russell and Mark Schlesinger. Dodge Cox is lead corporate sponsor and corporate chair is Thomas B. Klein.

Tickets for this year's event begin at \$300 per person. Tables of 10 are available at \$10,000, \$7,500 and \$5,000. Purchasers of tables and purchasers of individual tickets of \$350 and above will be acknowledged in the Dinner Program.

For further information please contact the Special Events Office at (415) 750-7219 or email arianda@calacademy.org.

You may also purchase tickets by using the order form on Page 14.

Bernard Osher Foundation Free Monthly Wednesdays Grant

The California Academy of Sciences is proud to announce the Bernard Osher Foundation's grant of \$100,000 to help support the monthly Free Wednesdays program this year. On the first Wednesday of every month, all visitors are admitted free of charge. The Osher Free Day is an important facet of the Academy's outreach to the greater San Francisco community. The Academy is most grateful for the Bernard Osher Foundation's long-term efforts to make the museum, aquarium, and planetarium more accessible to all.

Discovery

"I READ DISCOVERY. DO YOU?" asks Jo Markovich, an Academy member and founding Eastwood Associate. A retired teacher, Jo is a native San Franciscan and a longstanding Academy friend. *Discovery*, the Academy's magazine of philanthropy, is published twice a year. "It's filled with interesting articles about history, people, and gifts to the Academy," comments Jo. For more information about Academy giving, estate and life-income gifts and planning ideas, visit www.calacademy.org, click on "Support," and then select "Planned Giving." To receive *Discovery*, complete the coupon (page 14) or contact Nancy Baker at (415) 750-7354 or nbaker@calacademy.org.



Jo Markovich

Luis Baptista Memorial Concert

"The study of birds has enriched my life in ways that cannot be put into words. . . I hope to pass on some of the joy the birds have bestowed on me."

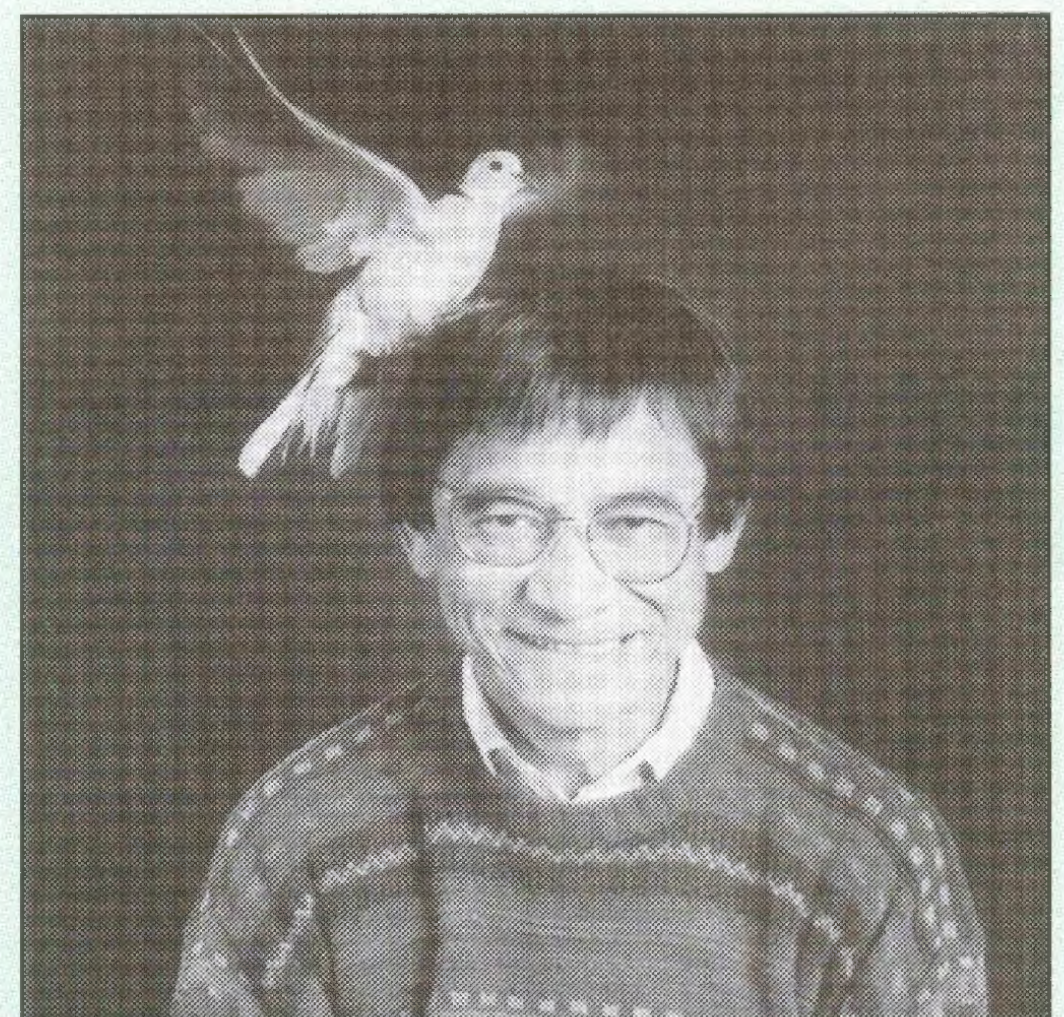
Luis F. Baptista (1941–2000), curator and chair of Ornithology and Mammalogy, California Academy of Sciences

In the prime of his 40-year career, Luis Baptista died unexpectedly on June 12, 2000. His distinguished accomplishments—as scholar, hands-on researcher, conservationist, and one of the world's great aviculturists—left a legacy for professionals and amateurs alike. Enraptured by the idea of birdsong as music, he gained worldwide attention shortly before his untimely death.

In honor of Luis Baptista and his passion for music, the Academy presents a highly regarded chamber music ensemble performing Olivier Messiaen's monumental Quartet for the End of Time at the Herbst Theatre, benefiting the Baptista Memorial Fund.

Wednesday, May 22 8 pm
Herbst Theatre

\$40, \$60, \$75, \$125 (includes on-stage reception) for tickets, call City Box Office at (415) 392-4400



MEMBER INFORMATION

Guided Tours: Free one-hour highlight tours daily

Open 365 days a year.

Regular hours (Labor Day weekend to Memorial Day) 10 am – 5 pm

Summer hours (Memorial Day weekend to Labor Day) 9 am – 6 pm

Information Hotline: (415) 750-7145

Web site: www.calacademy.org

For information during the weekend: (415) 750-7375

Special Lectures: (415) 750-7128

Membership: (415) 750-7111

Library: (415) 750-7102

Education: (415) 750-7100

Earth Day Festival: April 20 & 21

The True Survivors

Family Wildlife Presentation

Come see how animals become teachers and understand the natural systems on which all life depends. Renowned environmental educator and Bay Area resident, Steve Karlin will introduce you to live animals from around the Earth: A Canadian Lynx, an Arctic Fox, a Golden Eagle, an American Alligator, a Two-Toed Sloth and other exotic creatures.

Saturday & Sunday, April 20 & 21

1 pm

Morrison Auditorium



Canadian Lynx

Explore these Earth Day attractions from 10 am to 4 pm Saturday & Sunday:

- The Insect Discovery Lab will let you handle live insects, spiders and other thrilling arthropods.
- The Coyote Point Museum will bring their live Great Horned Owl and falcon.
- S.C.R.A.P. – Explore the art of creative re-use with Scrounger's Center for Recycled Art Project.
- Join Academy Librarians for young child story time to start your Earth Day right at 10:30 am.
- Race with the sun as the Solar Car Project displays their Solar Car.
- Win New Wheels – Enter our drawing for free bicycles and gift certificates to bike shops!

See page 10 for more Earth Day Festival presentations and workshops.



CALIFORNIA ACADEMY OF SCIENCES



Golden Gate Park

Aquarium Natural History Museum Planetarium

Education

Research

The Academy encourages the use of public transportation.

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